DOCUMENT RESUME

ED 227 852 IR 050 145

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TITLE TRS-80 at the Maine State Library.
INSTITUTION Maine State Library, Augusta.
PUB DATE Oct 82
NOTE 23p.
PUB TYPE Audiovisual Materials (100) -- Reports - Descriptive (141)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Book Catalogs; Computer Oriented Programs; Large Type Materials; *Library Automation; Library Cooperation; Library Technical Processes; *Microcomputers; Records (Forms); Serials; Shared Services; *State Libraries; *Word Processing
IDENTIFIERS Invoices; Library Statistics; Mailing Lists; *Maine State Library; *TRS 80; Union Lists of Serials

ABSTRACT

This report describes the applications and work flow of a TRS-80 microcomputer at the Maine State Library, and provides sample computer-generated records and programs used with the TRS-80. The machine was chosen for its price, availability, and compatibility with machines already in Maine's schools. It is used for mailing list management (with pre-packaged SCRIPSIT and PENCIL/PAL software); serials check-in (with PROFILE); production of printed book catalogs and union lists of serials (with SCRIPSIT); compilation of statistics (with VISICALC); and typing invoices (with an in-house program). Customized software has been written in-house to enhance many of the pre-packaged programs. The report notes that word processing is the single most important library application for microcomputers. Sample records, forms, and lists generated on the TRS-80 are presented, including for the sake of comparison, serials records produced with both pre-packaged and customized software. Also shown are copies of customized programs which enable the Maine State Library to print serials records, search their large print catalog for new titles, list the holdings of a single library from a union list of serials, and produce invoices covering online searching on the part of member libraries of the Maine Online Consortium. (ESR)

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TRS-80 AT THE MAINE STATE LIBRARY

by

Donald Wismer

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TRS-80 at the Maine State Library

by Donald Wismer, Coordinator
Automated Data Services

October, 1982

I almost never write anything on a typewriter anymore. Microcomputer-based word processing is so much faster and more efficient.

But I began to write this on my primitive office key-clicker because the computer's not around! It's off in another Section gobbling up a film catalog!

We've had a TRS-80 Model III (Radio Shack) at the Maine State Library since last December, only ten months as I write this. Yet it already plays a significant role in library operations. It is the repository of many small mailing lists. It does serials check-in and gift subscription management. And it does word processing, including small list management and the production of various catalogs, flyers, handouts, and mass mailings.

Already one of the eight State Library Sections has ordered a machine of its own. Scheduling of the present machine is tight -- which is why I'm using a typewriter right now! And the future? Well, the future is bright and glorious and riddled with unknowns.

WHY A TRS-80?

Our decision to go after a microcomputer was not the result of cost studies or extensive work flow analyses. It proceeded instead from an almost intuitive sense by State Librarian J. Gary Nichols and a few others that such machines could dramatically raise individual productivity if used in a rational and carefully controlled manner.

We had heard that an essential ingredient of successful micro application was the presence on the staff of someone who had a personal interest in the technology. We had such a person -- me! I had had a Model III at home for over a year and was using it for writing and small business applications.

(Our library experience so far suggests that a micro is used most efficiently when there is an in-house hobbyist of some kind, but that even without such a person, significant work would be done using the prepackaged work processing program alone, if not several others.)

Why a TRS-80 as opposed to an Apple, Televideo, Sanyo, Atari, Commodore, Osborne, Xerox or some other? Two reasons. One was price: the Radio Shack machine with two disk drives, 48 kilobytes of memory, could be had for $2000. The second reason: the local microcomputer climate. In Maine schools last year, for example, there were one hundred twenty TRS-80's, forty Apples, thirty-eight Commodores, four Ataris, and eighteen others.

Maine is a rural state. While there are many Radio Shack outlets, there were only two Apple and Commodore dealers when we bought our machine, none of them local, and the other brands were virtually unrepresented. Local service was important. So was the need for us, as the State Library, to reflect our constituency.

We did not need the superior graphics of the Apple and other machines for the purposes we had in mind. Software support for the TRS-80 was extensive and exploding. (Have you ever seen the phone-book sized magazine 80 MICRO? It's catching up with BYTE, and BYTE is hard to believe!) And we were not buying a machine whose presence would force all purchasing decisions in the future to fall into some narrow line. So we went ahead with the TRS-80 Model III, and have not regretted it.

Since then one of our regional consultants has purchased an Osborne, which is as portable as a briefcase. It suits his needs perfectly.

WHAT DO WE DO WITH IT?

Perhaps I should start with what we do NOT do with it:

1) CIRCULATION. It's too small for that at this library, and anyway the

relevant software is only now becoming available.

2) BILLING AND OVERDUES. But we're moving toward it, intending to use PROFILE III+, due to arrive any day.

3) STATISTICAL ANALYSIS. We have the software (STATPAK) and see it in the future.

4) BUSINESS OFFICE FUNCTIONS: accounts receivable, accounts payable, payroll, etc. That office would need its own, full time machine for such things.

5) ACQUISITIONS. But the Section that ordered its own machine, wants it for acquisitions!

6) CATALOG CARD PRODUCTION. No reason why not, except that we use OCLC for that.

7) PUBLIC ACCESS. Not our role at present.

8) DIAL-ACCESS TO DATA NETWORKS. We have on hand a Decwriter LA-36 that we've used for DIALOG, SDC, etc. for years, and while the micro could be used, there's no reason to yet. At some future date the direct storage of remote database output onto the micro's floppy disks may be indicated, though.

Here's what we DO do with it:

1) MAILING LIST MANAGEMENT. This was the first thing we did with the machine -- it's a natural, and we could have thrown out our Addressographs, if we had any. Using the word processing program SCRIPSIT from Radio Shack, and a privately-produced program called PENCIL/PAL, we became able to store mailing lists, print labels on our daisy wheel printer, and merge the mailing lists with text to produce custom form letters, i.e., letters that look individually typed, and go to many people with the same content. We now stock some sixteen lists, such as: state House and Senate members; Maine On-Line Consortium members; newspapers and radio stations in Maine; DOWNEAST LIBRARIES advertiser lists; a list of all state librarians; "Do You Like Libraries" lists (citizens who have responded to a Maine Library Association campaign to identify library supporters around the state). None of the lists have more than 600 names so far, a number reflecting the size of the lists rather than the capacity of the machine, which is about 2500 name/addresses on the two disks. The State's central computer services don't want to touch lists that small, but my heavens, the work we save!

2) SERIALS CHECK-IN. For two hours every morning, a staff member uses PROFILE from Radio Shack to check in periodicals. About once a week the file is printed in triplicate and distributed to Circulation and Reference. The Kard-X has been abandoned.

3) CATALOG PRODUCTION. By this I mean printed catalogs, book catalogs if you will, not card catalogs. Both Film Services and Handicapped Services have entered catalog copy onto disks using SCRIPSIT. With the daisy wheel printer, high quality copy can be typed out in flexible format, and then sent out for photo-offset printing. Handicapped has already produced a catalog of large print books using not the daisy wheels, but a borrowed dot matrix printer with large type capacity. The beauty of both catalogs, of course, is that updating and reprinting next year will be childishly simple.

4) UNION LIST PRODUCTION. This is no more than a variation of 3) above, but worth mentioning separately to emphasize the possibilities. With Maine's Special Library Group (SLG) and Health Science Librarians Information Cooperative (HSLIC), we've put together a serials union list for thirteen special libraries so far, using SCRIPSIT. Again, it's a question of size. A large union list is not feasible on a small machine, but we're getting a handle on the holdings of libraries in Maine with unique collections. One person spent an hour a day for about three weeks for inputting, so that the staff time needed was not exorbitant. And next year, such easy updating!

5) STATISTICS. Not in-depth analysis, but compilation. Media Services uses VISICALC (Radio Shack) to keep track of videotape library usage, and Library Development uses it for compiling statewide public library statistics for later printing in the annual LIBRARIES OF MAINE.

6) INVOICE TYPING. Some time ago we

formed the Maine On-Line Consortium, which is nothing more than a local subscription contract with DIALOG to gain that database vendor's maximum discount rate. Instead of billing each library separately, DIALOG sends us a statement every month with each password's usage broken down. We in turn calculate the discount, and send a bill (invoice) to each library. I've designed a program in BASIC to make that invoicing process as near to a "no-work" proposition as I could get; the program does everything except stuff envelopes.

THE WORK FLOW

The computer is scheduled for four hour blocks of time each working day; the noon hour is set aside for staff self-training. The machine is housed on a metal table with wheels. When a Section is scheduled, a staff member comes to my office and wheels the machine to its temporary workplace.

A diskette box goes with the TRS-80 everywhere. In the box are the important utility programs: TRSDOS 1.3, SCRIPSIT and PENCIL/PAL, PROFILE, VISICALC, and two self-teaching packages from Radio Shack, BASIC INSTRUCTION and DISK INSTRUCTION. PROFILE III+ will soon replace PROFILE, and SUPERSCRIPSIT will replace both SCRIPSIT and PENCIL/PAL. Also on the table are manuals for the non-instruction programs.

The daisy wheel printer (a C.Itoh F-10/40) is placed on the table only when needed, otherwise staying in my office. When the machines reach their work station, the printer is taken off and placed near the computer, and the cable attached. Each Section was given one ribbon cartridge, and is responsible for its future ribbon and paper needs. A dozen daisy wheels are available in my office for changing the pica and elite typefaces as desired.

Each Section was given five diskettes when we acquired the computer, and each is responsible for purchasing additional disks as needed. The Sections were trained in disk care and usage, and especially in the need for backing up all files in use on a daily basis (which means every four hours at least, when the shift from one Section to another occurs). Each Section handles back-up storage; I take my back-ups home nightly, while some Section Heads store the back-up disks in the same room, but widely apart from the masters. At least one Section rotates its masters and back-ups, using the master one day and backing it up, then using the back-up as the master the next day and backing it onto the previous day's master, etc. It's a good practice.

In these ten months, staff mistakes have accounted for about two hours of lost time. Humbly, I confess that an hour of this time was my own, once when I carelessly SAVEed a blank screen on top of an hour's work, and the other when I changed all the T's in a file to Y's and vice versa. (Don't ask!)

The other error occurred when one of the disk drives did not properly format a diskette for some reason, and the staff member did not know how to correct the problem (I was out of town that day).

The upshot is that so far, knock on wood, there have been no disastrous losses of data, due I think to the careful back-up practices of the Sections, and the skills of the individual staff users.

Staff training has not been a formal thing. When we first got the machine I held a staff meeting to show it off, and from then on, it was up to the Section Heads to determine need. In general, staff members using the machine are those who have shown interest and aptitude. Those few staff members who exhibit fear haven't been forced to take it on. But word of mouth is a funny thing, and some previously reluctant staffers have come around after observing the successes of the computer users.

And a few have delved deeply into it. One secretary has become highly skilled in VISICALC, for example, far surpassing anyone on the staff, including me, in knowledge of that invaluable program.

CUSTOM PROGRAMMING

As you can see from the above, we have generally stuck with prepackaged programs, mostly from Radio Shack itself.

But I am increasingly using my self-taught BASIC to work around the limitations of some of that software, and to do things for which we have no ready, in-house package.

One such home-built program is MOLCINV, the invoice typist for the Maine On-Line Consortium mentioned above. That's done in BASIC, and there's nothing particularly complicated about it. For each invoice, the computer asks no more than four questions, and the user responds.

More complex are several programs I have written to interact with disk files, the purpose being to get around the printing limitations of PROFILE or to select parts of a SCRIPSIT-produced file. For example, in designing the special libraries' union list, I wanted a way to search the serial file and pull out holdings for a particular library, giving that library a double-check mechanism before the union list is sent to the printer. SCRIPSIT has no ability to do that, and so I wrote a BASIC utility for it. It works fine as long as the union list files are SAVEed onto disk using ASCII format, the S,A rather than the S or SAVE command in SCRIPSIT.

For serials check-in, we wanted something beyond the restricted printing capabilities of PROFILE, which essentially demands that each record be printed across the page on a single line, with no more than 132 characters per record printed (when the record may hold 255 characters or so). The BASIC program which I wrote takes advantage of the fact that PROFILE stores records sequentially, with fields rigidly fixed in terms of length. The result is a readable printout.

In the case of the large print catalog for Handicapped Services, the Section Head wanted a way to search for and print all titles entered during the course of the year, between printings of the full catalog. This was accomplished with another BASIC utility, the key being that Handicapped entered a "tag" before every new title in the form of an asterisk.

Film Services had a slightly different problem. It wanted to insert subject headings into the text of its catalog on-line, headings that would not print when the full catalog was printed, but that could be searched for the custom printing of subject-specific listings. SCRIPSIT has a print-suppression command that allows on-line text that will not be printed, and a BASIC utility is in the works that will accomplish the custom searching.

Writing these little utilities takes time, in particular for debugging. The advantages to the Sections are great, but I don't mean to suggest that each micro-using library has to have a programmer on the staff. No. The prepackaged programs are enough. Custom programming is no more than icing on the cake.

CONCLUSIONS

Libraries should get microcomputers for administrative and office functions. Now.

On-the-spot staff training is enough for most situations. It is optimum to have at least one staffer trained in-depth, and/or "into" micros as a hobby.

Prepackaged software is sufficiently available and useable for library applications.

Word processing (including list management) is the single most important library application for microcomputers -- so far.

THE LAST TWO WORDS

Get one!

(Note: About two pages in and after much liquid paper, I threw in the towel and brought in my own micro to finish the rest of this article. So you see, I'm addicted!)

Donald Wismer is Editor of DOWNEAST LIBRARIES, and author of the young adult science fiction novel STARLUCK (Doubleday, 1982), and the scholarly THE ISLAMIC JESUS (Garland, 1977). He is Coodinator of Automated Data Services at the Maine State Library, and is a member of the Maine Library Association Executive Board.

FIGURE I. Serials Check-in: Monthlies, Bi-Weeklies, Bi-Monthlies

A. The PROFILE Record

```
TITLE: ACA JOURNAL OF CHIROPRACTIC
ISSN: 0044-7609  RENEW: GIFT
SOURCE: DIRECT   9/28
CN,Y,VOL,NO: 1982,V19,NO1-09 (1975-76,79-     )
COMMENTS: M MUL   FEB NO.2 CLAIMED 9/27
JA1: 1 JA2: 0 FE1:   FE2:   MA1: 1 MA2: 0 AP1: 1 AP2: 0 MY1: 1
MY2: 0 JU1: 1 JU2: 0 EX1: 0 JY1: 1 JY2: 0 AU1: 1 AU2: 0 SE1: 1
SE2: 0 OC1:   OC2:   NO1:   NO2:   DE1:   DE2:   EX2:

TITLE: ACADIAN GENEALOGY EXCHANGE
ISSN: 0000-0000  RENEW: 9/82 11.50
SOURCE: DIRECT: JANET JEHN   10/05
CN,Y,VOL,NO: CN 929.05 A168A-N,'82 V11,NO1-04(1979-     )
COMMENTS: Q GR
JA1: 1 JA2: 0 FE1: 0 FE2: 0 MA1: 0 MA2: 0 AP1: 1 AP2: 0 MY1: 0
MY2: 0 JU1: 0 JU2: 0 EX1: 0 JY1: 1 JY2: 0 AU1: 0 AU2: 0 SE1: 0
SE2: 0 OC1: 1 OC2: 0 NO1: 0 NO2: 0 DE1: 0 DE2: 0 EX2: 0
```

B. The Same Records Using the Home-Brew PRTMONTH

```
ACA JOURNAL OF CHIROPRACTIC
     0044-7609
     GIFT
     DIRECT   9/28
     1982,V19,NO1-09 (1975-76,79-     )
     M MUL   FEB NO.2 CLAIMED 9/27
     10  101010100101010

   In Jan one issue was received.
   In Mar one issue was received.
   In Apr one issue was received.
   In May one issue was received.
   In Jun one issue was received.
   In Jul one issue was received.
   In Aug one issue was received.
   In Sep one issue was received.


ACADIAN GENEALOGY EXCHANGE
     0000-0000
     9/82 11.50
     DIRECT: JANET JEHN   10/05
     CN 929.05 A168A-N,'82 V11,NO1-04(1979-     )
     Q GR
     1000001000000100000100000

   In Jan one issue was received.
   In Feb no issues.
   In Mar no issues.
```

Notes for Figure I

PROFILE permits no more than some 255 characters per record (the new PROFILE III+ permits over 800, I hear). Naturally this limits the amount of information in the check-in record. The Technical Processing Section decided to provide two fields per month for check-in, wherein a "1" meant that an issue of the particular periodical was in fact received, a "0" (zero) that it was not, and a blank that no action has occurred one way or the other. One additional field was provided for July and December, a device to allow for the fact that bi-weeklies have three issues a month twice a year.

The home-brew program PRTMONTH allows the printing of the entire file in readable form with all information intact and interpreted (PROFILE allows only one horizontal line per record in printing, and no more than 132 of the possible 255 characters).

Note that in the case of ACA JOURNAL, February shows no activity. PRTMONTH could easily provide a routine to flag such records for claims processing.

FIGURE II. Serials Check-in: Weeklies

A. The PROFILE Record

```
TITLE: AVIATION WEEK  (SUB 3 YR 100) SOURCE: EB 12/83
CN,Y,VOL,NO: 1982,V117,NO1-15(1974-     )  10/12
JA: 4,11,18,25     FE: 1,8,15,22      MA: 1,8,15,22,29
AP: 12,19,26       MY: 5.10,17,24,31  JU: 7,14,21,28
JY: 5,12,19,26     AU: 2,9,16,23,30   SE: 6,13,20,27
OC: 4,11           NO:                DE:

TITLE: BARRONS      (SUB. 3 YRS 115)  SOURCE: EB 12/83
CN,Y,VOL,NO: 1982,JA-OC (1 YR PLUS CURRENT)  10/19
JA: 4,11,18,25     FE: 1,15,22        MA: 1,8,15,22,29
AP: 5,12,19,26     MY: 3,10,17,24,31  JU: 7,14,21,28
JY: 5,12,19,26     AU: 2,9,16,23,30   SE: 6,13,20,27
OC: 4,11,18        NO:                DE:
```

B. One of the Records Using the Home-Brew PRTWEEK

```
AVIATION WEEK  (SUB 3 YR 100)          EB 12/83
    1982,V117,NO1-15(1974-     )  10/12
  Issues received so far
  ----------------------
  Jan: 4,11,18,25
  Feb: 1,8,15,22
  Mar: 1,8,15,22,29
  Apr: 12,19,26
  May: 5,10,17,24,31
  Jun: 7,14,21,28
  Jul: 5,12,19,26
  Aug: 2,9,16,23,30
  Sep: 6,13,20,27
  Oct: 4,11
```

Notes for Figure II

Figures I and II are based on similar reasoning, as are the serials check-in modules for gifts and newspapers, neither shown here. The only real difference is in the formatting of the output; if we had followed the same pattern as the one shown above for monthlies, too much space would have been consumed by the check-in fields.

The PRTWEEK program itself is shown below, to give some idea of the simplicity of the coding. I make no claims that it is the neatest programming in the world, just that it works.

FIGURE II (continued): The PRTWEEK Program

```
1 REM  This program prints TPR's serials list for WEEKLIES.
2 REM  The application here is SERIALS CHECK-IN.
3 REM  Copyright 1982 by the Maine State Library.
4 REM                        State House Station 64.
5 REM                        Augusta, ME 04333.
6 REM  Written by Donald Wismer, Coordinator.
7 REM             Automated Data Services.
8 REM             207/289-3328.
9 REM                                          March 19, 1982.
10 REM  ------------------------------------------------------
11 CLS
12 PRINT "What is today's date?":LINEINPUT Q$
14 LPRINT "Periodicals -- Weekly                                    "Q$
16 LPRINT "-------------------------------------------------------------------"
17 LPRINT
18 LPRINT
19 LPRINT
20 CLEAR 1000
30 OPEN "I", 1, "PRODAT"
40 LINEINPUT#1,A$
42 LPRINT
43 LPRINT
50 Z$=LEFT$(A$,5):IF Z$="*****" THEN GOTO 240
60 DATA Jan,Feb,Mar,Apr,May,Jun,Jul,Aug,Sep,Oct,Nov,Dec
70 C$=MID$(A$,1,29)
80 D$=MID$(A$,30,14)
90 E$=MID$(A$,44,46)
100 F$=MID$(A$,90)
110 PRINT C$;
115 LPRINT C$;
120 PRINTTAB(35)"     "D$
125 LPRINTTAB(35)"     "D$
130 PRINT "     "E$
135 LPRINT "     "E$
140 PRINT "   Issues received so far"
145 LPRINT "   Issues received so far"
150 PRINT "   ----------------------"
155 LPRINT "   ----------------------"
160 FOR N=1 TO 143 STEP 13
165    READ M$
170    I$=MID$(F$,N,13)
175 IF VAL(I$)=0 GOTO 190
177 IF I$="              " GOTO 190
178 IF I$="" GOTO 190
180    PRINT "   "M$": "I$
185    LPRINT "   "M$": "I$
190    IF M$="Dec" GOTO 210
200 NEXT N
210 RESTORE
220 A$=""
230 GOTO 40
240 CLOSE 1
250 END
```

FIGURE III. Large Print Catalog for Handicapped Services

```
ASHFORD, JEFFREY
  HOSTAGE TO DEATH  (M)
  A RECIPE FOR MURDER  (M)

ASHTON, ANN
  CONCESSION  (R)

ASHTON, SHARON
 *THE SANTA ANA WIND  (RS)

ASIMOV, ISAAC
  THE END OF ETERNITY  (SF)
  FOUNDATION  (SF)
  FOUNDATION & EMPIRE  (SF)
  SECOND FOUNDATION  (SF)

ASPINALL, RUTH
  THE PROMISE OF HIS RETURN  (M)

ATHANAS, VERNE
  THE PROUD ONES  (W)

ATTENBOROUGH, JOHN
  ONE MAN'S INHERITANCE (F)

ATWATER, JAMES D.
  TIME BOMB  (ADV)

AUCHINCLOSS, LOUIS
  THE COUNTRY COUSIN  (F)
  HOUSE OF THE PROPHET  (F)
  I COME AS A THIEF  (F)
  THE PARTNERS  (F)
  A WORLD OF PROFIT  (F)

AUDEMARS, PIERRE
 *NOW DEAD IS ANY MAN  (M)

AUSTEN, JANE
  NORTHANGER ABBEY  (F)
  PERSUASION  (F)
  PRIDE & PREJUDICE  (F)

BABSON, MARIAN
  MURDER SAILS AT MIDNIGHT  (M)
  THE TWELVE DEATHS OF CHRISTMAS  (M)
```

Notes for Figure III

The large print records are kept in a SCRIPSIT file in ASCII format, i.e., using the S,A rather than the S or SAVE command. It is usually printed using a dot matrix printer capable of a large face typestyle.

The asterisk (*) in the fragment at left indicates a title that has been added since the last publication of the catalog. The purpose of CATGRAB, highlighted below, is to search for those new titles in order to produce a supplement to the main catalog, pending the next publication of the full catalog.

The type of book is also noted in the record; (M) means Mystery, for example. Another program will be written to search the catalog by type of book, and type out a separate list for each general type.

FIGURE III (continued): CATGRAB at Work

```
ASHTON, SHARON
 *THE SANTA ANA WIND  (RS)

AUDEMARS, PIERRE
 *NOW DEAL IS ANY MAN  (M)

BLACK, LAURA
 *STRATHGALLANT  (RS)

BLAKE, NICHOLAS
 *THE WORM OF DEATH  (M)

BONNECARRERE, PAUL
 *THE GOLDEN TRIANGLE  (ADV)
```

FIGURE III (continued): CATGRAB's BASIC Coding

```
10 CLS
20 PRINT "CATGRAB: Searching the large print catalog for new tit
les."
30 PRINT
40 PRINT
50 PRINT "         by Donald Wismer, Maine State Library"
60 PRINT "            State House Station 64"
70 PRINT "            Augusta, ME 04333"
80 PRINT "            207/289-3328"
90 '                                    July 1982
100 'The program searches the State Library's large print
110 'catalog, which is a SCRIPSIT file saved in ASCII format
120 'using the S,A feature. NOTE: Not only should the files be
122 'saved in ASCII using S,A in SCRIPSIT, but all end of page
124 'markers (backwards slashes) should be eliminated. The best
126 'way would be to use the global replace feature of SCRIPSIT
128 'to change the backwards slashes (CONTROL V) to end of line
129 'markers (CONTROL X).
130 '-------------------------------------------------------
140 CLEAR 1000
150 PRINT
160 PRINT
170 PRINT
180 PRINT "Please hit ENTER to continue."
190 INPUT E$:IF E$<>"" THEN GOTO 180
```

FIGURE III (continued): CATGRAB's BASIC Coding (continued)

```
190 INPUT E$:IF E$<>"" THEN GOTO 180
200 CLS
210 ONERROR GOTO 1000
220 PRINT "What file would you like to search for new titles";
230 INPUT F$
240 OPEN"I",1,F$
250 X$="":N=1
260 ONERROR GOTO 350
270 LINEINPUT#1,A$
280 IF A$="" THEN GOSUB 2000
290 IF A$="" THEN GOTO 270
300 B$=LEFT$(A$,1)
310 IF B$<>" " THEN GOSUB 3000
320 C$=LEFT$(A$,2)
330 IF C$=" *" THEN GOSUB 4000
340 GOTO 270
350 CLOSE 1
360 PRINT "That's the end of the file. Hit ENTER if you"
370 PRINT "want to search another file."
380 INPUT E$:IF E$<>"" THEN END
390 RESUME 210
400 '-----------------------------------------------------
1000 'This error routine ensures against wrong file names.
1010 PRINT "No such file name on the disk. Please try again."
1020 RESUME 220
1030 '-----------------------------------------------------
2000 'This subroutine prints the author and new titles.
2010 IF T$(1)="" THEN GOTO 2090
2040 PRINT X$:LPRINT X$:X$=""
2050 FOR T=1 TO N
2060    PRINT T$(T):LPRINT T$(T):T$(T)=""
2070 NEXT T
2080 PRINT:LPRINT
2090 N=1
2100 RETURN
2110 '-----------------------------------------------------------
3000 'This subroutine saves the author's name into X$.
3010 X$=A$
3020 RETURN
3030 '-----------------------------------------------------
4000 'This subroutine saves as many new titles as are listed
4010 'under a particular author's name.
4020 T$(N)=A$
4030 N=N+1
4040 RETURN
```

FIGURE IV. A Union List of Serials Using SCRIPSIT

SLG/HSLIC/MSL Union List of Serials, A-L

last updated September 16, 1982

ABCA Bulletin
UNM v.44, 1980+

AV Shop (see alphabetically below)

Abridged Index Medicus
SKIL v.8, 1977+

Abstract Bulletin of the Institute of Paper Chemistry
SDW v.1, 1930+

Accounts of Chemical Research
SDW v.1, 1968+

Across the Board
UNM v.12, 1978+

Adhesives Age
SDW v.15, 1972+

Administrative Law Review
CLE v.17, 1964+

Administration in Social Work
PINE v.2-4, 1978-80

Administrative Management
SDW v.41, 1980+
UNM v.29, 1969+

Advertising Age
UNM v.48, 1977+

Aero Sun Times
CMVTI 1976+

Alaska
WVTI v.46, 1980+

Alcoholism
CAL v.1, 1980+

Alternative Sources of Energy
CMVTI 1973+

Notes for Figure IV

The Union List is listed alphabetically by title. When a new library is entered, its holdings are merely inserted at the appropriate alphabetical spot. SCRIPSIT does not sort, but it does search files for any string desired. Once a list gets rather long, it is quite convenient to insert new records, if a printout of the file is available for scanning in order to determine the place where the new entry should go. Deleting is very easy in SCRIPSIT, of course.

The home brew UNIPRINT (below) types out holdings for any single library in the list. The printout is then sent to the library for error-checking. It is vital that the file be saved in ASCII format (S,A command rather than S or SAVE) for UNIPRINT to work.

A separate SCRIPSIT file contains the name/addresses of the libraries in the list.

FIGURE 4 (continued): UNIPRINT at Work

SLG/HSLIC/MSL UNION LIST OF SERIALS - CUSTOM PRINTOUT

Searching for library: CMVTI in file: UNILIST/A October 19, 1982

Alternative Sources of Energy
CMVTI 1973+

American Machinist
CMVTI 1980+

American Metric Journal
CMVTI Nov.1975+

Appraisal Journal
CMVTI 1979+

Appraiser
CMVTI Dec. 1979+

Atlantic
CMVTI 1975+

Audio
CMVTI 1979+

Audio-Visual Communications
CMVTI 1979+

AV Shop
CMVTI, current year only

Business Week
CMVTI 1975+

BYTE
CMVTI 1978+

Car Craft
CMVTI 1979+

FIGURE IV (continued): UNIPRINT's BASIC Coding

```
10 'SLG/HSLIC/MSL UNION LIST OF SERIALS - CUSTOM PRINT PROGRAM
15 '-------------------------------------------------------
20 'by Donald Wismer, Coordinator
30 '   Automated Data Services
50 '   State House Station 64
60 '   Augusta, ME 04333
70 '   207/289-3328
80 '   copyright 1982; all rights reserved.
90 '-------------------------------------------------------
100 'Files to be searches must be in ASCII format. If you are
110 'using SCRIPSIT, for example, save your files to disk using
120 'S,A FILENAME, rather than S FILENAME.
130 '-------------------------------------------------------
140 'VARIABLE NAMES
150 '  A$ - Journal Title
160 '  D$ - Date (from sub.10000)
170 '  L$ - Library code
180 '  M$ - Library code (test)
185 '  Q$ - Library codes in DATA statement
190 '  T$ - Tests for suffix in UNILIST, specifying file
200 '  X$ - "UNILIST/"
205 '
210 '  D - Day in sub.10000
220 '  L - Number of letters in library code
230 '  N - FOR...NEXT counter
240 '  Y - Month in sub.10000
245 '-------------------------------------------------------
250 DATA January,February,March,April,May,June,July,August,Septe
mber,October,November,December
260 DATA CAL,CLE,CMVTI,MAYO,PINE,SDW,SEBA,SKIL,TAY,UNM,WVTI
270 T=11:'  Number of libraries represented in line 260
280 CLEAR 1000
290 CLS
300 PRINTTAB(5)"SLG/HSLIC/MSL UNION LIST OF SERIALS - CUSTOM PRI
NTOUT"
310 LPRINT"SLG/HSLIC/MSL UNION LIST OF SERIALS - CUSTOM PRINTOUT
"
320 PRINTTAB(5)"-----------------------------------------------
-----"
330 LPRINT"-----------------------------------------------------
"
340 PRINT:PRINT:LPRINT:LPRINT
350 PRINT"Enter the suffix of the file to be searched. For examp
le, if the file is UNILIST/M, then hit M (ENTER).";
360 LINEINPUT T$
370 X$="UNILIST/":T$=X$+T$
380 ONERROR GOTO 2000
390 OPEN"I",1,T$
400 CLOSE 1
405 PRINT"-----------------------------------------------------"
406 PRINT
407 PRINT "You have selected: "T$
410 GOSUB 10000:'  Establishes today's date for lineprinting.
```

FIGURE IV (continued): UNIPRINT's BASIC Coding (continued)

```
420 PRINT"What library do you wish to list -- ENTER the union li
st code    for the particular library, for example: SDW(ENTER):"
;
425 LINEINPUT L$
430 L=LEN(L$)
440 FOR N=1 TO 11
450   READ Q$:IF Q$=L$ THEN GOTO 3000
460 NEXT N
470 GOTO 4000
500 OPEN "I",1,T$
505 PRINT
510 ONERROR GOTO 600
520 LINEINPUT#1,A$
530 IF A$="" THEN GOTO 520
540 LINEINPUT#1,B$
550 IF B$="" THEN GOTO 520
560 M$=MID$(B$,3,L)
570 IF M$=L$ THEN GOTO 590
580 GOTO 540
590 PRINT A$:LPRINT A$:PRINT"  "B$:LPRINT"  "B$:PRINT:PRINT:LPRI
NT:LPRINT:GOTO 520
600 PRINT:PRINT:PRINT:PRINT"END OF FILE"
610 PRINT"Do you wish to search another file and/or another libr
ary? If  so, hit Y and ENTER; if not, hit ENTER.":INPUT T$
620 IF T$<>"Y" THEN CLS:PRINT"Goodbye from the SLG/HSLIC/MSL UNI
ON LIST!":PRINT:PRINT:PRINT:CLOSE 1:END
630 RESTORE
635 CLOSE 1
640 GOTO 290
2000 '-------------------------------------------------------
2010 'This subroutine guards against entry of a nonexistent file
2015 CLS
2016 PRINT T$
2020 PRINT"No such file is on the disk(s). Please try again."
2030 CLOSE 1
2040 RESUME 350
3000 '-------------------------------------------------------
3010 'This subroutine prints a heading and today's date.
3020 LPRINT"Searching for library: "L$;
3025 LPRINTTAB(30)"in file: "T$;
3030 LPRINTTAB(53)I$
3040 LPRINT:LPRINT
3050 GOTO 500
```

FIGURE IV (continued): UNIPRINT's BASIC Coding (continued)

```
4000 '-----------------------------------------------------
4010 'This subroutine traps library code entry errors.
4020 RESTORE
4030 FOR N=1 TO 12
4040   READ Q$
4050 NEXT N
4054 CLS
4055 PRINT L$
4060 PRINT"Oops! That library is not listed -- here's the curren
t list:"
4070 FOR N=1 TO 11
4080    READ Q$
4090    PRINT Q$,
4100 NEXT N
4105 PRINT
4110 RESTORE
4120 FOR N=1 TO 12
4130   READ Q$
4140 NEXT N
4150 GOTO 420
10000 '-----------------------------------------------------
10010 Y=VAL(LEFT$(TIME$,2))
10020 FOR N=1 TO 12
10030   READ X$
10040   IF Y=N THEN D$=X$
10050 NEXT N
10060 D=VAL(MID$(TIME$,4,2))
10070 Y=VAL(MID$(TIME$,7,2))
10080 IF Y>50 THEN Y=1900+Y
10090 IF Y<50 THEN Y=2000+Y
10100 D$=D$+STR$(D)+","+STR$(Y)
10120 RETURN
```

FIGURE V. Invoice Typist for the Maine On-Line Consortium

Sample Invoice

(Note: All dollar figures are fictional.)

THE MAINE ON-LINE CONSORTIUM
Maine Library Association
c/o Donald Wismer, Coordinator
Maine State Library
State House Station 64
Augusta. ME 04333
phone 207/289-3328

October 19, 1982

University of Southern Maine Library
c/o Jim Brady - Reference
96 Falmouth Street
Portland ME 04103

INVOICE NO.: *USM 10/82

Your DIALOG costs for October, 1982 $ 234.56
You used 6.712 connect hours.
At the Consortium discount rate of $10 per connect hour,
your discount is: 67.12

Amount due the Consortium: $ 167.44
Your balance on hand is: $ 876.54

Your new balance is: $ 709.10

No payment needed
Thank you!

FIGURE V (continued): MOLCINV's BASIC Coding

```
10 'INVOICE TYPIST for the Maine On-Line Consortium
20 '-------------------------------- August, 1982
30 'By Donald Wismer, Coordinator
40 'Automated Data Services
50 'Maine State Library
60 'State House Station 64
70 'Augusta, ME 04333              phone 207/289-3328
80 '                Copyright 1982 by Donald Wismer
90 '-------------------------------------------------
100 '
110 'Variable names
120 ' C$ - Invoice number (using library code)
130 ' D$ - Today's date
140 ' F$ - Format for dollar amounts
150 ' I$ - Format for connect hour figures
160 ' L$ - Member library's name/address
170 ' M$ - Month and year covered by invoice
180 ' N$ - Month, used for determining month code for
           invoice number
190 ' P$ - Establishes the year code in invoice number
200 ' Q$ - Scans months to set month code in invoice number
210 ' X$ - Check for paper in printer; used in graphic typing
220 '
230 ' C - Owed to Consortium
240 ' D - Day of the month (today)
250 ' F - DIALOG bill; also used for account balance in 6000
260 ' I - Connect hours
270 ' L - Separates month from year in M$
280 ' N - For/next counter
290 ' S - Discount total
300 ' T - Month code in invoice number
310 ' Y - Year
320 '-------------------------------------------------------
330 DATA January,February,March,April,May,June,July,August,Septe
mber,October,November,December
340 DATA *USM,University of Southern Maine Library,c/o Jim Brady
 - Reference,96 Falmouth Street,Portland ME 04103
350 DATA BOW,Bowdoin College Library,c/o John Ladley,Bowdoin Col
lege,Brunswick ME 04011
360 DATA UMO,Raymond H. Fogler Library,c/o Frank Wihbey - Refere
nce,University of Maine,Orono ME 04469
370 DATA FMC,Marine Colloids,c/o Barbara Swift - Librarian,FMC C
orp.,Rockland ME 04841
380 DATA BIG,Bigelow Laboratory,c/o Pamela Shephard-Lupo - Libra
rian,McKown Point,West Boothbay Harbor ME 04575
390 DATA PPL,Portland Public Library,c/o Jonathan Burns - Refere
nce,5 Monument Square,Portland ME 04102
400 DATA *MSL,Maine State Library,c/o Donald Wismer - ALS,State
House Station 64, Augusta ME 04333
410 DATA BPL,Bangor Public Library,c/o Susan Wight,  Reference L
ibrarian,Bangor ME 04401
420 DATA UNM,Union Mutual Life Insurance Co.,c/o Philip Kalloch
- Librarian,Box 548,Portland ME 04112
```

Notes on Figure V

The Maine On-Line Consortium is a group of fifteen Maine libraries taking advantage of the discount plan of DIALOG Information Services, Inc., a major vendor of nationally-available databases accessible by telephone hook-up to a terminal or microcomputer. The Consortium pays a set amount of money to DIALOG each year in anticipation of usage, thereby gaining a substantial discount.

DIALOG bills the Consortium, and the Consortium in turn bills each member library for its monthly usage.

The home-brew program MOLCINV was written to make this billing process as easy as possible, while taking into account the fact that some libraries have prepaid certain amounts, and others have not.

When MOLCINV is used, it asks only two or three questions,

FIGURE V (continued): MOLCINV's BASIC Coding (continued)

```
430 DATA SDW,S.D.Warren Co.,c/o Deborah Chandler - Librarian,89
Cumberland,Westbrook ME 04092
440 DATA *IN1,The Information Exchange - Customer No.15C75,c/o D
on Saastamoinen,State House Station 23,Augusta ME 04333
450 DATA BMH,Bangor Mental Health Institute,c/o Wendy Troiano -
Librarian,Health Science Library,Bangor ME 04401
460 DATA *IN2,The Information Exchange - Customer No.24285,c/o D
on Saastamoinen,State House Station 23, Augusta ME 04333
470 DATA UML,Donald L. Garbrecht Library,c/o Dennis Benamati,Uni
versity of Maine Law School,Portland ME 04104
480 DATA COL,Miller Library,c/o Cynthia Keating - Reference,Colb
y College,Waterville ME 0490
490 DATA JAC,Jackson Laboratory,c/o Joan Staats - Librarian,Rese
arch Library, Bar Harbor ME 04609
500 DATA END
510 '-------------------------------------------------
600 CLEAR 1000
605 POKE 16427,99
610 CLS
620 PRINTTAB(18)"THE MAINE ON-LINE CONSORTIUM":PRINTTAB(25)"Invo
ice typist":PRINT:PRINT
630 T=0:F$="####.##":I$="##.###"
640 PRINT"What month and year does the invoice cover?
        (Use this format: March, 1999)":LINEINPUT M$
650 '-------------------------------
660 'Default to the subroutine that creates the invoice number.
670 GOSUB 1000
680 IF T=0 THEN GOTO 640
690 '-------------------------------
700 'Default to the subroutine that formats today's date.
710 GOSUB 10000
720 '-------------------------------
730 'Default to the subroutine that types the Consortium
    address and today's date.
740 READ C$
750 PRINT"If paper is in printer and ready, hit ENTER.":LINEINPU
T A$
760 GOSUB 2000
770 '-------------------------------
780 'Default to the subroutine that types the address of the
     library being billed and the invoice number.
790 GOSUB 3000
800 '-------------------------------
810 'Default to the subroutine that calculates the charges and
     types the total bill.
820 GOSUB 4000
830 '-------------------------------
840 'On to the next library's bill?
850 READ C$:IF C$="END" THEN GOTO 890
860 CLS:PRINT"On to the next library's bill."
870 F=0:I=0
880 GOTO 750
890 CLS
900 PRINT"              All finished!":PRINT
910 '-------------------------------
```

depending on the particular library: what month is covered by the invoice, and what is the library's gross bill from DIALOG. (The third question in certain cases: what is the prepaid balance in the particular library's account.)

MOLCINV does all calculations, and also automatically types the library's name/address onto the invoice and envelope. It creates an invoice number out of the month covered and a library's code, and even pulls today's date out of the dialog that ensues when the computer is turned on each day.

FIGURE V (continued): MOLCINV's BASIC Coding (continued)

```
920 PRINT"Now to type the mailing envelopes."
930 RESTORE:FOR N=1 TO 12:READ Q$:NEXT N
940 GOSUB 5000
950 PRINT"              All finished!"
960 END
1000 '-----------------------------------------------------
1010 'This subroutine establishes the month code in the invoice
     number.
1020 IF LEN(M$)<9 THEN GOTO 1500
1030 P$=RIGHT$(M$,2)'The year
1040 L=LEN(M$):L=L-6:N$=LEFT$(M$,L)'The month
1050 FOR N=1 TO 12
1060   READ Q$
1070   IF Q$=N$ THEN T=N
1080 NEXT N
1090 IF T=0 THEN GOTO 1500
1100 RESTORE
1110 RETURN
1500 '----------------------
1510 'This routine guards against errors in the entry of M$,
     mostly caused by caps/lower case problems.
1520 CLS:PRINT M$:PRINT:PRINT"Oops! You must use caps and lower
case with a comma and a"
1530 PRINT"space before the year, just like this:"
1540 PRINT"March, 1982"
1550 PRINT
1560 PRINT "Now try again!"
1570 RESTORE
1580 RETURN
2000 '-----------------------------------------------------
2010 'This subroutine types the Consortium address and today's
     date.
2020 LPRINT"THE MAINE ON-LINE CONSORTIUM"
2030 LPRINT"Maine Library Association
2040 LPRINT"c/o Donald Wismer, Coordinator";:LPRINTTAB(61)D$
2050 LPRINT"Maine State Library"
2060 LPRINT"State House Station 64"
2070 LPRINT"Augusta, ME 04333"
2080 LPRINT"phone 207/289-3328"
2090 LPRINT
2100 RETURN
3000 '-----------------------------------------------------
3010 'This subroutine types the address of the library being
     billed and the invoice number.
3020 X$=STRING$(40,45):LPRINT X$:LPRINT"<";:LPRINTTAB(40)">"
3030 C$=C$+STR$(T)+"/"+P$
3040 CLS:READ L$:PRINT"Working on "L$"'s invoice.":X$=STRING$(64
,45):PRINT X$:PRINT
3050 LPRINT"  "L$;:LPRINTTAB(61)"INVOICE NO.: "C$
3060 FOR N=1 TO 3
3070   READ L$
3080    LPRINT"  "L$
3090 NEXT N
3100 LPRINT"<";:LPRINTTAB(40)">":X$=STRING$(40,45):LPRINT X$
3110 LPRINT:LPRINT
3120 RETURN
```

FIGURE V (continued): MOLCINV's BASIC Coding (continued)

```
4000 '-----------------------------------------------------
4010 'This subroutine calculates the charges and types the
     total bill.
4020 PRINT"Enter the total bill from DIALOG for the member libra
ry.":INPUT F
4030 LPRINT"Your DIALOG costs for "M$;
4040 IF F<>0 THEN LPRINTTAB(60)"$ ";:LPRINTUSING F$;F:ELSE LPRIN
TTAB(60)"   none"
4050 PRINT"Enter the library's connect hours.";:INPUT I
4060 LPRINT"   You used ";:IF I<>0 THEN LPRINTUSING I$;I;:ELSE L
PRINT "no";
4070 LPRINT" connect hours."
4080 IF I=0 THEN FOR N=1 TO 16:LPRINT:NEXT N:GOTO 4240
4090 LPRINT"   At the Consortium discount rate of $10 per connec
t hour,"
4100 LPRINTTAB(43)"your discount is:";
4110 S=10*I
4120 LPRINTTAB(60)"  ";:LPRINTUSING F$;S
4130 LPRINTTAB(50)"--------------------"
4140 LPRINT
4150 LPRINTTAB(33)"Amount due the Consortium: $ ";
4160 C=F-S
4170 LPRINTTAB(62);:LPRINTUSING(F$);C
4180 IF LEFT$(C$,1)="*" THEN GOSUB 6000 ELSE LPRINT:LPRINT:LPRIN
T
4190 X$=STRING$(80,45):LPRINT X$
4200 IF C<0 THEN LPRINT ELSE LPRINT"Make checks payable to the M
aine On-Line Consortium, MLA"
4210 LPRINT:LPRINT:LPRINT
4220 LPRINTTAB(34)"------------"
4230 IF C>0 THEN LPRINTTAB(34)"Please remit" ELSE LPRINTTAB(31)"
No payment needed"
4240 LPRINTTAB(35)"Thank you!"
4250 FOR N=1 TO 30
4260    LPRINT
4270 NEXT N
4280 RETURN
5000 '-----------------------------------------------------
5010 'This subroutine arranges the typing of the envelopes.
5020 READ C$:GOTO 5120
5030 PRINT"Is the envelope in the printer? If so, hit ENTER.":II
NEINPUT X$
5035 CLS
5040 FOR N=1 TO 4
5050 READ Q$
5060    LPRINTTAB(55)Q$
5070 NEXT N
5080 FOR N=1 TO 10
5090    LPRINT
5100 NEXT N
5110 GOTO 5020
```

FIGURE V (continued): MOLCINV's BASIC Coding (continued)

```
5120 IF C$="END" THEN RETURN
5130 IF C$="*IN2" THEN GOTO 5160
5140 IF C$="*MSL" THEN GOTO 5160
5150 GOTO 5030
5160 FOR N=1 TO 4
5170    READ Q$
5180 NEXT N
5190 GOTO 5020
6000 '-------------------------------------------------------
6010 'This subroutine is used only when there is a prepaid
      balance in the library's account.
6015 F=0
6020 PRINT "What is left unspent from this library's prepayment"
;:INPUT F
6030 LPRINTTAB(33)"Your balance on hand is:   $ ";
6040 LPRINTTAB(62);:LPRINTUSING F$;F
6050 LPRINTTAB(50)"--------------------"
6060 C=C-F
6070 IF C<0 THEN LPRINTTAB(33)"Your new balance is:       $ ";EL
SE LPRINTTAB(33)"Please pay the Consortium: $ ";
6080 LPRINTTAB(62);:LPRINTUSING(F$);ABS(C)
6090 RETURN
10000 '-------------------------------------------------------
10010 'This subroutine pulls out today's date for typing later.
10020 Y=VAL(LEFT$(TIME$,2))
10030 FOR N=1 TO 12
10040 READ X$
10050   IF Y=N THEN D$=X$
10060 NEXT N
10070 D=VAL(MID$(TIME$,4,2))
10080 Y=VAL(MID$(TIME$,7,2))
10090 IF Y>50 THEN Y=1900+Y
10100 IF Y<50 THEN Y=2000+Y
10110 D$=D$+STR$(D)+","+STR$(Y)
10120 RETURN
```

A FINAL NOTE

All home-brew programs mentioned above are Copyright 1982 by Donald Wismer and the Maine State Library. They can be secured in machine-readable form by sending a blank disk and $5 prepaid to: Donald Wismer, Coordinator, Automated Data Services, Maine State Library, State House Station 64, Augusta, ME 04333. They will be formatted using a TRS-80 Model III with 40-track disk drives using TRSDOS 1.3, which is the only format available at present. If you would like permission to key in the programs, or if you would like typed coding for the programs not listed, please write and inquire.